Fuel Guidance - CG In-Line Fuel Sampling Program Updated October '04

By Tom Gahs

In partnership with the Defense Energy Support Center (DESC), the Coast Guard is participating in an In-line Fuel Quality Sampling Program. The data is being used to:

1) Establish the overall quality of commercial fuel products;
2) Confirm bunker quality contract compliance for Naval Purchase Description Marine Gas Oil (NPD MGO), DF2, or B76 products;
3) Check fuel quality (for information only) against critical F-76 MIL-SPEC criteria that aren't included as bunker contract requirements;
4) Assess quality for each load of fuel, as actually delivered from the supplier, and provide participating cutters with specific operational advice when a fuel load doesn't meet expected quality standards;
5) Build a fuel quality database so cutters can anticipate fuel quality for a given port of call, and avoid suppliers of poor quality fuel.

All major cutters are currently participating in the program. All commercial bunker fuel products are sampled and analyzed, whether the fuel is obtained through DESC bunker contractors (NPD MGO, DF2, or B76), or on the open market. Commercial fuel should be sampled whether it's obtained at your homeport or at any domestic/foreign port when you are on patrol anywhere in the world.

MIL-SPEC fuel products (F-76 or JP5) from government bulk sources are not sampled because these products have their own extensive quality assurance programs. Remember that for marketing purposes, some commercial fuel suppliers may call their product F-76, although it most likely will not be qualified to the F-76 MIL-SPEC. One good indication of whether a fuel should be sampled is if it is dyed. Commercial marine fuel is typically dyed (red in the domestic US, sometimes green or blue elsewhere in the world) for tax and/or environmental purposes. True F-76 is though never dyed. If the fuel is dyed, you should definitely take a sample and forward it for analysis regardless of what the supplier might call the product. Undyed fuel isn't necessarily F-76 though. As long as the Flash Point is high enough to meet marine safety standards, suppliers may provide on-road diesel fuel as bunker fuel. Standard on-road diesel fuel is typically not dyed.

JP-5 used for ship propulsion fuel is not sampled, even if provided by a commercial source, because the ILSP analysis contract only supports analysis of diesel fuel (JP-5 is kerosene). JP-5 used for aviation is sampled and analyzed under a separate aviation safety program.

Fuel samples are taken at the deck manifold connection using a special sampling flange. The sampling flange provides a continuous drip sample throughout the fueling period, and across the entire cross section of the fuel manifold, to ensure the sample is representative of the whole fuel load. A five-liter sample from each fueling is forwarded by express courier to the contracted lab. Compliance with the NPD contract requirements is reported within 24 hours of the samples' receipt. Results for the full F-76 results takes a few days longer. The results are interpreted by ELC and forwarded to the cutter via Naval message. ELC also provides operational guidance if the fuel didn't meet quality expectations. If a bunkers contract requirement wasn't met, ELC initiates the formal Customer Complaint process with DESC. We've seen several cases where DESC bunker contractors have improved the quality of their product as a result of this process. The results are also entered into a fuel quality database. The database is updated quarterly and can be accessed from any CG Work Station III at http://cgweb.elcbalt.uscg.mil/docs/Fueltest/fueltest.htm.

The program pays the cost of the analysis, shipping, and consumable supplies. The CG's In-Line Fuel Sampling Program has proven to be extremely beneficial for fuel quality personnel at DESC, Navy and the CG, but also for the participating cutters. Any questions concerning the CG's In-Line Fuel Sampling Program should be directed Tim Curry, ELC-026, voice 410-762-6737, fax 410-762-6203, email TJCurry@elcbalt.uscg.mil.